

The *Pracel* or *Parocels*, is a labyrinth of small islands, rocks and sand-banks, which appears to extend up to the 11th degree of north latitude, in the 107th parallel of longitude from Paris. Some navigators have traversed part of these shoals with a boldness more fortunate than prudent, but others have suffered in the attempt. The Cochin Chinese called them *Cón uáng*. Although this kind of archipelago presents nothing but rocks and great depths which promises more inconveniences than advantages, the king GIA LONG thought he had increased his dominions by this sorry addition. In 1816, he went with solemnity to plant his flag and take formal possession of these rocks, which it is not likely any body will dispute with him.

III.—On the *Bibos*, *Gauri Gau* or *Gauriká Gau* of the Indian forests.
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To the Editor Journal Asiatic Society.

I have the honor to submit to you the following subgeneric and specific characters of that magnificent wild *Bovine* animal, whose skull Mr. EVANS recently exhibited in your Society's rooms. Amongst my drawings, transmitted to England two years ago, you may remember to have seen delineations of this animal's cranium, portrayed comparatively with those of *Bubalus*, *Bos* and *Bisonus*. The distinctive characters, as therein depicted, were certainly sufficiently striking, and were noticed by me at that time: but, until I had had opportunity to examine the whole bony frame of both sexes, I did not venture to give public expression to my conviction that this animal would be found to constitute a new type of the Bovidæ. I have recently had such opportunity, and my hesitation has ceased. I have no longer any doubt that the *Gouri Gau* of the *Saul* forest and of the hilly jangals of south *Behar*, is neither a *Bos* nor a *Bison*, but an intermediate form; and, from the vague indications of writers, I apprehend that the *Fossil Urus* of Europe*, and ARISTOTLE's Persian wild bull with depressed horns, were other species of the same type.

Whether our species be identical with the *Gaurus* or with the *Gayæus* of authors, it is impossible to conjecture; since the descriptions of them amount to little more than the tittle-tattle of sportsmen, most unwarrantably (as I conceive) adopted into science by men like TRAILL, G. St. HILAIRE, and H. SMITH, who have, some of them, made *Bisons* of these animals, and others *Tauri*, according to the almost unaided dictates of mere imagination! My subgeneric and specific characters are both prolix; but so long as our classification continues

* There are two animals bearing the name of *Bos Urus*.

in its present crude state, this prolixity cannot be avoided. You already possess a good delineation of the skull*: I subjoin herewith one of the bony trunk. From the combined characters of the two I deduce my subgeneric designation; and to prove the fixedness of those characters, I may add that they are equally conspicuous in both sexes; the most remarkable perhaps of them—viz. the signal development of the spinous processes of the dorsal vertebræ, being also fully revealed in the fœtus in utero†!

The trunk I have sketched for you‡ is that of a female; and you have but to compare it with the trunk of a cow (any breed) to perceive in how signal a degree the superior length of the spinous processes adverted to, distinguishes *Bibos*. Owing to this osteological peculiarity, the back of the living animal, when the head is down (as in the act of grazing) describes almost half a circle from nape to tail. But, owing to the slight development of the analogous processes of the cervical vertebræ, and to the extraordinary height of the frontal crest of the head, the state of quiescence in the living animal (the stand at ease) exhibits a deep fall between the head and shoulders, very unlike the continuous downward sweep from nose to croup which is attributed to the Bisons, and is ascribed in them to the development of the spinous processes of both cervical and dorsal vertebræ, half and half in both. If this be so, the position of the ridge will constitute the distinction, quoad hoc, between *Bibos* and *Bisonus*, as the possession of it by both will constitute a strong affinity between the two groups, and one which it is of peculiar importance to mark, with reference to those principles by which structure seems to be governed throughout the ruminating animals.

On the other hand, the relationship of *Bibos* to *Bos proper* is sufficiently apparent in their common possession of thirteen pairs of ribs, a broad flat forehead, (exclusive of the peculiar frontal crest) and a smooth glossy fine coat, though the value of the last character may be open to reasonable objection.

The size and weight of the skull in *Bibos*, as compared with *Bos proper*, are vastly greater than general proportion would require, if they were organized on the same principles: and to this superior weight of the head in the former must be referred, as to its cause, that signal development of the spinous processes of the dorsal vertebræ spoken of.

* See Plate XVI. of the present volume.

† I recently procured a specimen of the fœtus from the mother's womb. It was about two months old.

‡ See Plate XXXIX.

We have no instance of this latter peculiarity in any proper *Bovine* animal: and, as it is developed even in the womb in *Bibos*, characterising before birth the *females as well as the males* of the race, we need look no further for an essential difference of structure between *Bos* and *Bibos*.

One word as to the specific name. *Subhemachalus* is bad, because I have now every reason to believe that this animal is found in various and remote parts of India. *Gaurus* and *Gavæus* are bad, because a host of errors cling to the extant descriptions of both, and because we can neither distinguish between the two, nor affirm safely that our animal is identical with either. Names taken from peculiar structure are perhaps the best. Wherefore I would propose the specific name of *Cavifrons* for our animal, as the type of this new form, of which one peculiarity is the concavity of the forehead, caused by that terminal ascending sweep of the frontals which carries them above the highest edge of the bases of the horns, notwithstanding the extraordinary dimensions of the latter. The horns spread latitudinally, both *before* and *behind* the utmost breadth of the frontal crest, but *not* above it. In well grown males the extreme superior limit of the bases of the horns is from one to two inches below the crown of the frontal crest: I am not aware that this inferior position of the horns, nor their strong tendency towards the Bubaline shape (depressed and angular) is to be traced in any true *Bovine* animal.

The popular name of Gauri's bull (from *Gauri* the wife of *Siva*) might suggest the sufficiently euphonious and appropriate appellation of *Gaurianus*, but it is objectionable, because I have reason to believe that its popular proto-type is applied indiscriminately to all the wild bulls of India, some of which are probably *Bisons* (as *Gaurus*) and others, probably congeners of our *Bibos*.

RUMINANTES, BOVIDÆ.

Genus *Bos*; Subgenus (?) *Bibos*, nob.

Subgeneric characters.

Head and forequarters exceedingly large. Cranium bovine in its general character, but much more massive and depressed: its breadth between the orbits equal to the height, and half of the length: frontals extremely large in all their proportions, deeply concave and surmounted by a huge semicylindric crest rising above the bases of the horns. Postcal plane of the skull vertical, equal to the frontal plane, and divided centrally by the lambdoid crest. Orbits more salient, and rami of the lower jaw straighter, with less elevated condyles, than in the *Bos*: thirteen pairs of ribs. Spinous processes of the dorsal ver-

tebræ extremely developed with gradual diminution backwards, causing the entire back to slope greatly from the withers to the croup. Neck sunk between the head and back. Dewlap evanescent. Horns short, very thick and remote, depressed, subtrigonal, presenting the acute angle of the triangle to the front.

1. Species new and type, *Bibos cavifrons*, nob. *Gauri gau* of Hindus. Habitat, *Saul* forest.

Specific character.—Large wild Indian *Bibos* with fine short limbs; short tail not reaching to the houghs, broad fan-shaped horizontal ears; smooth glossy hair of a brown red or black color, paled upon the forehead and limbs; tufted knees and brows, and spreading green horns, with round incurved black tips, and with soft rugous bases, furnished posteally with a fragrant secretion.

10 feet long from snout to rump, and $5\frac{1}{2}$ feet high at the shoulder; head (to the crown of forehead) 23 inches, and tail 33 inches. Female rather smaller, but preserving all the characters of the male.

N. B. To all appearance two other species of *Bibos* may be found in the fossil *Urus* of Europe, and in ARISTOTLE'S wild bull of Persia with depressed horns. These I would call, respectively.

2. *Bibos Classicus*.

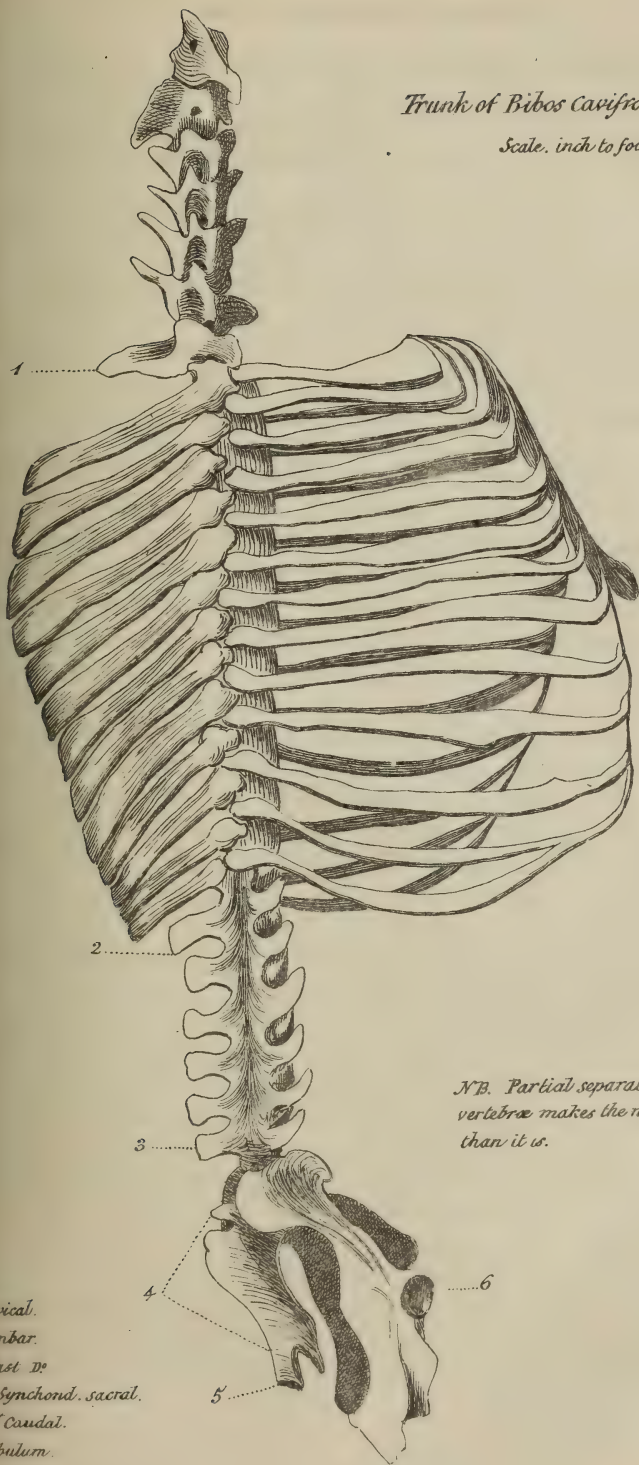
3. *Bibos Aristotelis*.

Nor are these animals thus mentioned idly: for the suggested new allocation of them may stimulate curiosity: travellers in Persia may possibly yet discover the living species alluded to by ARISTOTLE; whilst if further research into the fossil remains of the ancient *Urus* of Europe should bring to light the trunk as well as skull of that species, it would be a most interesting circumstance to find that our Indian forests yet shelter a type of form long since swept from the surface of the globe in the Western world: and the proximity of the *Himálaya* renders such a contingency at least probable.

The *Gauri Gau* never quits the deepest recesses of the *Sál* forest, avoiding wholly the proximate *Tarái* on one side, and the hills on the other. It is gregarious in herds of from 10 to 30, the females much preponderating over the males in the herds, though even in a small herd, there are usually two or three grown males whose conjoint office it is to guide and guard the party. This office is discharged with uncommon alertness, proving the animal to possess great perfection in all the senses, and with indomitable courage too, if need be; so that neither tiger, nor rhinoceros, nor elephant dare molest the herd. During the heat of the day the herd reposes in the deepest cover, coming forth at morn and eventides to feed on the small and open pastures interspersed throughout the forest. Here the animals

Trunk of Bibos Cavifrons nob. fœm.

Scale. inch to foot.



NB. Partial separation of the cervical vertebrae makes the neck seem longer than it is.

- 1. Cervical.
- 2. Lumbar.
- 3. 4th & last D^o.
- 4. & 4 Synchond. sacral.
- 5. 1st Caudal.
- 6. Scapulum.

